

SAND TANK WASH AT I-8
FCD GAGE ID# 40007

STATION DESCRIPTION

LOCATION – The gage site is at the I-8 crossing of Sand Tank Wash in the south part of Gila Bend. The gaging equipment is located on the northwest corner of the westbound I-8 bridge. Latitude N 32° 55' 58.7", Longitude W112° 42' 20.2". Located in S06 T6S R4W in the Gila Bend 7.5-minute quadrangle.

ESTABLISHMENT – The District established gaging on May 31, 2001.

DRAINAGE AREA – 245.6 mi², which includes Bender Wash drainage area. Stream splits in the upper watershed may cause gain or loss.

GAGE – The recording gage is a pressure transducer type instrument. The PT is located on the third pier from the west abutment (LB). The PT is at elevation 1.74 feet gage height, levels of March 20, 2024.

There are no staff gages at this location.

There is one crest gage at this location. It is located on the left bank bridge wall. It has a pin elevation of 1.44 feet gage height, levels of March 20, 2024.

ZERO GAGE HEIGHT – Zero gage height is equivalent to 760.540 feet NAVD88.

HISTORY – No previous gaging or history at this location. An indirect measurement of the June 20, 2000 flood was done on June 28, 2000. Gage was installed on May 31, 2001. PT gage moved to elevation 0.75 feet gage height for construction on August 7, 2002. CSG removed. PT moved again following construction on September 18, 2002 to 1.30 feet gage height. Crest stage gage re-installed. A large flow occurred on August 14, 2021 (~14,000 cfs) which altered the channel and buried the transducer gage by several feet. Transducer gage was moved to third pier from left bank in April 2022 at a level of about 3.5 feet gage height. Transducer gage was lowered in February 2024.

REFERENCE MARKS –

RM-SNDTNK is an FCD brass cap located about 100 feet northwest of the gage standpipe. Elevation 767.160 feet NAVD88, or 6.620 feet gage height, levels of January 4, 2018. Northing 704151.319 feet; Easting 457850.366 feet. Monument was established on May 1, 2001.

RM-1 is a rebar located on the top of the left bank, painted white, located about 25 feet north of RM-SNDTNK. It is at elevation 5.610 feet gage height and 766.150 feet NAVD88, levels of January 4, 2018. This reference was not found during the survey of March 20, 2024.

RM-2 is a rebar located on the top of the right bank, painted white, located about 50 feet north of I-8 near the inside of the ADOT fence. It is at elevation 5.881 feet gage height and 766.421 feet NAVD88, levels of January 4, 2018. This reference was not found during the survey of March 20, 2024.

RM-3 is a steel stake located on the right bank along the north-south fence line about 10 feet upstream of the gate section in the fence. It is at elevation 7.239 feet gage height and 767.779 feet NAVD88, levels of March 20, 2024.

RP-1 is a chiseled 'X' located at the northwest edge of the westbound I-8 bridge. It is at elevation 2.433 feet gage height, and 762.973 feet NAVD88, levels of March 20, 2024.

RP-2 is a chiseled 'X' located on the NW edge of the downstream right bank sidewall. It is at elevation 2.696 feet gage height, and 763.236 feet NAVD88, levels of March 20, 2024.

There are eight monumented cross sections in the gage reach. Some of the cross-section end points may have been destroyed during the August 14, 2021 event.

Cross Section one is located at the gage and in on the north side of the westbound bridge. XS1LB is rebar with elevation 774.199 feet. XS1RB is rebar with elevation 775.017 feet.

Cross Section two is located about 200 feet downstream (north) of cross section one. XS2LB is a stake at elevation 764.316 feet. XS2RB is a stake at elevation 764.823 feet.

Cross Section three is located about 300 feet downstream from cross section two. XS3LB is a stake at elevation 764.231 feet. XS3RB is a stake at elevation 764.433 feet.

Cross Section Four is located about 225 feet downstream from cross section three. XS4LB is a stake at elevation 762.28 feet. XS4RB is a stake at elevation 762.771 feet.

Cross Section Five is located about 280 feet downstream from cross section four. XS5LB is a stake at elevation 759.964 feet. XS5RB is a stake at elevation 760.503 feet.

Cross Section Six is located about 200 feet downstream from cross section five. XS6LB is a stake at elevation 758.85 feet. XS6RB is a stake at elevation 759.548 feet.

Cross Section Seven is located about 300 feet downstream from cross section six. XS7LB is a stake at elevation 757.639 feet. XS7RB is a stake at elevation 758.572 feet.

Cross Section Eight is located about 325 feet downstream from cross section seven. XS8LB is a stake with elevation 755.65 feet. XS8RB is a stake at elevation 756.573 feet.

CHANNEL AND CONTROL – The channel is predominantly a sand channel up and downstream of the gage location. The channel is relatively flat with shallow banks on both sides. The main channel is defined and both banks are moderately to heavily vegetated. The channel flows to the north and curves slightly to the northwest past the bridge. The I-8 bridge utilizes several small pillars for support.

There is no significant control feature at low flows. The current shape of the channel at any given time influences flow. When the water level reaches about 1-2 feet gage height, the channel becomes the control.

RATING – The current rating is Rating #2, developed from an HEC-RAS model using surveyed data from a December 2021 survey.

DISCHARGE MEASUREMENTS – Wading measurements can be made in the channel downstream of the gage. The I-8 bridge is not suitable for bridge measurements. Indirect measurements are possible in a reach of channel downstream from the bridge. For low flows confined to the gaged main channel, cross sections 2, 3, and 4 downstream should be used. If flows were great enough that the channel about 400 feet west of the gaged channel also flowed, Cross sections 6, 7, and 8 should be surveyed too.

POINT OF ZERO FLOW – Is at about 0.0 feet gage height, levels of January 4, 2018.

FLOODS – The largest flow recorded was approximately 14,000 cfs at 7.7 feet gage height on August 14, 2021. Due to numerous side channels and breakouts, a more accurate estimate is not possible.

REGULATION – None known

DIVERSIONS – There may be some natural diversions to other watersheds in the flatlands north of the Sand Tank Mountains.

ACCURACY – Fair

JUSTIFICATION – Monitor flows in Sand Tank Wash for local street flooding in Gila Bend.

UPDATE – March 21, 2024
DE Gardner